

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method for tracking intra-chip events within a data processing system, said method comprising:

detecting an event responsive to a state within an integrated circuit chip;

responsive to the detection of said event, recording an occurrence of said event within an interface device that drives a system address bus having active cycles during which data access transactions are delivered and inactive cycles during which data access transactions are not delivered; and

broadcasting said the detected event on an off-chip system interconnect that is utilized to transmit non-diagnostic transactions within said data processing system by issuing a packet denoting the occurrence of the event from said interface device to the system address bus, said issuing step comprising delivering the packet on said system address bus only during inactive cycles.

Claims 2 – 5. (Cancelled)

6. (Currently Amended) ~~The method of claim 5, wherein said interface device is a bus interface unit that operates within a data storage system,~~ A system for tracking intra-chip events within a data processing system, said system comprising:

detecting an event responsive to a state within an integrated circuit chip;

responsive to said detecting an event, recording an occurrence of said event within a bus interface unit operating in a data storage system, said bus interface unit driving an off-chip system interconnect utilized to transmit non-diagnostic transactions within said data processing system, said bus interface unit programmed to identify a given packet on said system interconnect in accordance with a transaction type field encoded within said given packet, wherein said recording step comprising comprises:

identifying said packet as a diagnostic packet from data encoded within said transaction type field; and

in response to said identifying step, storing said diagnostic packet within a diagnostic transaction queue; and

broadcasting said detected event by issuing a packet from said bus interface unit denoting the occurrence of said event onto said off-chip system interconnect, said issuing step preceded by setting a transaction type identifier within said packet, wherein said transaction type identifier identifies said packet as a diagnostic packet.

7. (Currently Amended) The method of claim 5 6, wherein said event is precipitated by a data access transaction within said data storage system, said method further comprising associating a memory address with said diagnostic packet.

8. (Original) The method of claim 7, wherein said event is a castout of a shared cache line, said associating step comprising tagging said diagnostic packet with the address of said shared cache line.

9. (Currently Amended) The method of claim 1, further comprising retrieving said packet from said ~~off-chip system interconnect~~ system address bus at a diagnostic logging device.

10. (Currently Amended) The method of claim 9, wherein said retrieving said packet at a diagnostic logging device comprises:

snooping said ~~off-chip system interconnect~~ system address bus;

determining whether or not said packet includes a diagnostic transaction type identifier;

and

in response to said packet including a diagnostic transaction type identifier, recording said event within said diagnostic logging device.

11. (Currently Amended) ~~The method of claim 9, further~~ A method for tracking intra-chip events within a data processing system, said method comprising:

detecting an event responsive to a state within an integrated circuit chip;

broadcasting said detected event on an off-chip system interconnect that is utilized to transmit non-diagnostic transactions within said data processing system;

retrieving said packet from said off-chip system interconnect at a diagnostic logging device;

extracting diagnostic data from said packet; and

delivering said diagnostic data to a trace array logic device or a logic analyzer.

12. (Cancelled)

13. (Currently Amended) ~~The method of claim 2, wherein said interface device is included within a data storage device wherein said event is detected by a detection logic element~~ A method for tracking intra-chip events within a data processing system, said method further comprising[.];

utilizing a detection logic element to detect an event responsive to a state within an integrated circuit chip;

in response responsive to detecting said event, recording an occurrence of said event within an interface device included within a data storage device, said interface device driving said off-chip system interconnect, said recording including delivering an event detection signal from said detection logic element to said interface device; and

broadcasting said detected event on an off-chip system interconnect that is utilized to transmit non-diagnostic transactions within said data processing system.

14. (Original) The method of claim 13, wherein said delivering step is preceded by setting an event trigger condition within said detection logic element.

15. (Original) The method of claim 14, wherein said event is a castout of a shared cache line, said setting step comprising setting said event trigger condition to detect an occurrence of a castout of a shared cache line within said data storage device.

16. (Original) The method of claim 14, wherein said step of setting an event trigger condition comprises asserting a diagnostic flag readable by said detection logic element, wherein said asserted diagnostic flag enables said detection logic to deliver said event detection signal to said interface device.

17. (Original) The method of claim 16, further comprising the step of de-asserting said diagnostic flag such that said detection logic element is disabled from delivering said event detection signal to said interface device.

18. (Currently Amended) A system for tracking intra-chip events within a data processing system, said system comprising:

processing means for detecting an event responsive to a state within an integrated circuit chip;

processing means responsive to the detection of said event for recording an occurrence of said event within an interface device that drives a system address bus having active cycles during which data access transactions are delivered and inactive cycles during which data access transactions are not delivered; and

processing means for broadcasting said ~~the~~ detected event ~~on an off-chip system interconnect that is utilized to transmit non-diagnostic transactions within said data processing system~~ by issuing a packet denoting the occurrence of the event from said interface device to the system address bus, said issuing step comprising delivering the packet on said system address bus only during inactive cycles.

Claims 19-22. (Cancelled)

23. (Currently Amended) ~~The system of claim 22, wherein said interface device is a bus interface unit that operates within a data storage system.~~ A system for tracking intra-chip events within a data processing system, said system comprising:

processing means for detecting an event responsive to a state within an integrated circuit chip;

processing means responsive to said detecting for recording an occurrence of said event within a bus interface unit operating in a data storage system, said bus interface unit driving an off-chip system interconnect utilized to transmit non-diagnostic transactions within said data processing system. said bus interface unit programmed to identify a given packet on said system interconnect in accordance with a transaction type field encoded within said given packet, ~~said system further comprising:~~

processing means for identifying said packet as a diagnostic packet from data encoded within said transaction type field; and

processing means responsive to said identifying said packet as a diagnostic packet for storing said diagnostic packet within a diagnostic transaction queue; and

processing means for broadcasting said detected event by issuing a packet from said bus interface unit denoting the occurrence of said event onto said off-chip system interconnect, said issuing step preceded by setting a transaction type identifier within said packet, wherein said transaction type identifier identifies said packet as a diagnostic packet.

24. (Currently Amended) The system of claim ~~22~~ 23, wherein said event is precipitated by a data access transaction within said data storage system, said system further comprising processing means for associating a memory address with said diagnostic packet.

25. (Original) The system of claim 24, wherein said event is a castout of a shared cache line, said processing means for associating a memory address with said diagnostic packet comprising processing means for tagging said diagnostic packet with the address of said shared cache line.

26. (Currently Amended) The system of claim 18, further comprising processing means for retrieving said packet from said ~~off-chip system interconnect~~ system address bus at a diagnostic logging device.

27. (Currently Amended) The system of claim 26, wherein said processing means for retrieving said packet at a diagnostic logging device comprises:

processing means for snooping said ~~off-chip system interconnect~~ system address bus;

processing means for determining whether or not said packet includes a diagnostic transaction type identifier; and

processing means responsive to said packet including a diagnostic transaction type identifier for recording said event within said diagnostic logging device.

28. (Currently Amended) ~~The system of claim 26, further~~ A system for tracking intra-chip events within a data processing system, said system comprising:

processing means for detecting an event responsive to a state within an integrated circuit chip;

processing means for broadcasting said detected event on an off-chip system interconnect that is utilized to transmit non-diagnostic transactions within said data processing system;

processing means for retrieving said packet from said off-chip system interconnect at a diagnostic logging device;

processing means for extracting diagnostic data from said packet; and

processing means for delivering said diagnostic data to a trace array logic device or a logic analyzer.

29. (Cancelled)

30. (Currently Amended) ~~The system of claim 19, wherein said interface device is included within a data storage device wherein said event is detected by a detection logic element, A method for tracking intra-chip events within a data processing system, said system further comprising[.],~~

a detection logic element for detecting an event responsive to a state within an integrated circuit chip;

processing means responsive to detecting said event for recording an occurrence of said event within an interface device included within a data storage device, said interface device

driving said off-chip system interconnect, said recording including delivering an event detection signal from said detection logic element to said interface device; and

processing means for broadcasting said detected event on an off-chip system interconnect that is utilized to transmit non-diagnostic transactions within said data processing system.

31. (Original) The system of claim 30, further comprising processing means for setting an event trigger condition within said detection logic element.

32. (Original) The system of claim 31, wherein said event is a castout of a shared cache line, said processing means for setting an event trigger condition within said detection logic element comprising processing means for setting said event trigger condition to detect an occurrence of a castout of a shared cache line within said data storage device.

33. (Original) The system of claim 31, wherein said processing means for setting an event trigger condition comprises processing means for asserting a diagnostic flag readable by said detection logic element, wherein said asserted diagnostic flag enables said detection logic to deliver said event detection signal to said interface device.

34. (Original) The system of claim 33, further comprising processing means for de-asserting said diagnostic flag such that said detection logic element is disabled from delivering said event detection signal to said interface device.